

Diabetes in Idaho

A Summary Report—2001



July 2001

Idaho Department of Health & Welfare • Division of Health
Bureau of Health Promotion • Idaho Diabetes Control Program



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Idaho Diabetes Control Program
208-334-4928
www.idahohealth.org



Introduction

Purpose

The purpose of this report is to provide private and public health care professionals with a general summary of the prevalence, effects, costs, care levels, and risk factors associated with diabetes in Idaho. It is hoped this document will be the basis for future efforts to reduce the burden of diabetes in Idaho, a means of increasing awareness and improving levels of care, an aid to strategic planning efforts, and a benchmark for future program evaluation activities.

Overview of Diabetes

Diabetes mellitus is a group of chronic diseases characterized by hyperglycemia (elevated blood glucose) resulting from defects in insulin secretion, insulin action, or both. People with diabetes are at greater risk for developing other health complications including heart disease, kidney disease, blindness, and lower limb amputations.

Most diabetes cases fall into two categories:

- **Type 1**, formerly called insulin-dependent diabetes or juvenile-onset diabetes, usually begins during childhood or adolescence and requires insulin. About 5 to 10 percent of diabetes cases are type 1.
- **Type 2**, formerly called non-insulin-dependent diabetes or adult-onset diabetes, usually develops in adults who are overweight, physically inactive, or have a family history of diabetes. Prevalence of type 2 is greater in certain ethnic and racial groups such as Hispanics, Native

Americans, African Americans, and Asian-Pacific Islanders. Insulin resistance and relative insulin insufficiency characterize type 2. It may be undiagnosed for years because hyperglycemia can develop gradually without noticeable symptoms.

Idaho Diabetes Control Program

The Idaho Diabetes Control Program (DCP) has operated with core funding from the Centers for Disease Control and Prevention (CDC) since 1994. Because the burden of diabetes and the risk of developing the disease are growing statewide, addressing these issues is a public health responsibility. Over the past five years, the DCP has focused on defining the burden of diabetes by assessing prevalence and incidence. The DCP is coordinating and implementing programs and projects which tackle access to care issues, provide professional and public education, promote health communication messages, and create synergistic partnerships among provider systems. Healthy People 2010¹ diabetes objectives serve as the state directive toward reducing the burden of diabetes. The DCP participates fully in the public health infrastructure of the seven district health departments and other Idaho Department of Health and Welfare programs. The Diabetes Alliance of Idaho, a statewide coalition of people and groups working in diabetes care, works closely with the DCP. Over the years, the DCP has placed increasing emphasis on evaluation and surveillance and uses the findings from these efforts for future program planning and direction.

Geography and Population

- Idaho ranks 11th in land area among the states with 82,751 square miles.¹
- Idaho is comprised of 44 counties. Seven of these counties are classified as *urban* by the U.S. Census Bureau, meaning that each contains a population center with at least 20,000 people. Twenty-one counties are deemed to be *rural*, i.e., contain six or more persons per square mile, while 16 counties are classified as *frontier* with fewer than six people/square mile.²
- Seven public health districts serve Idaho.
- The population of Idaho totals 1.2 million people composed of the following racial groups:²

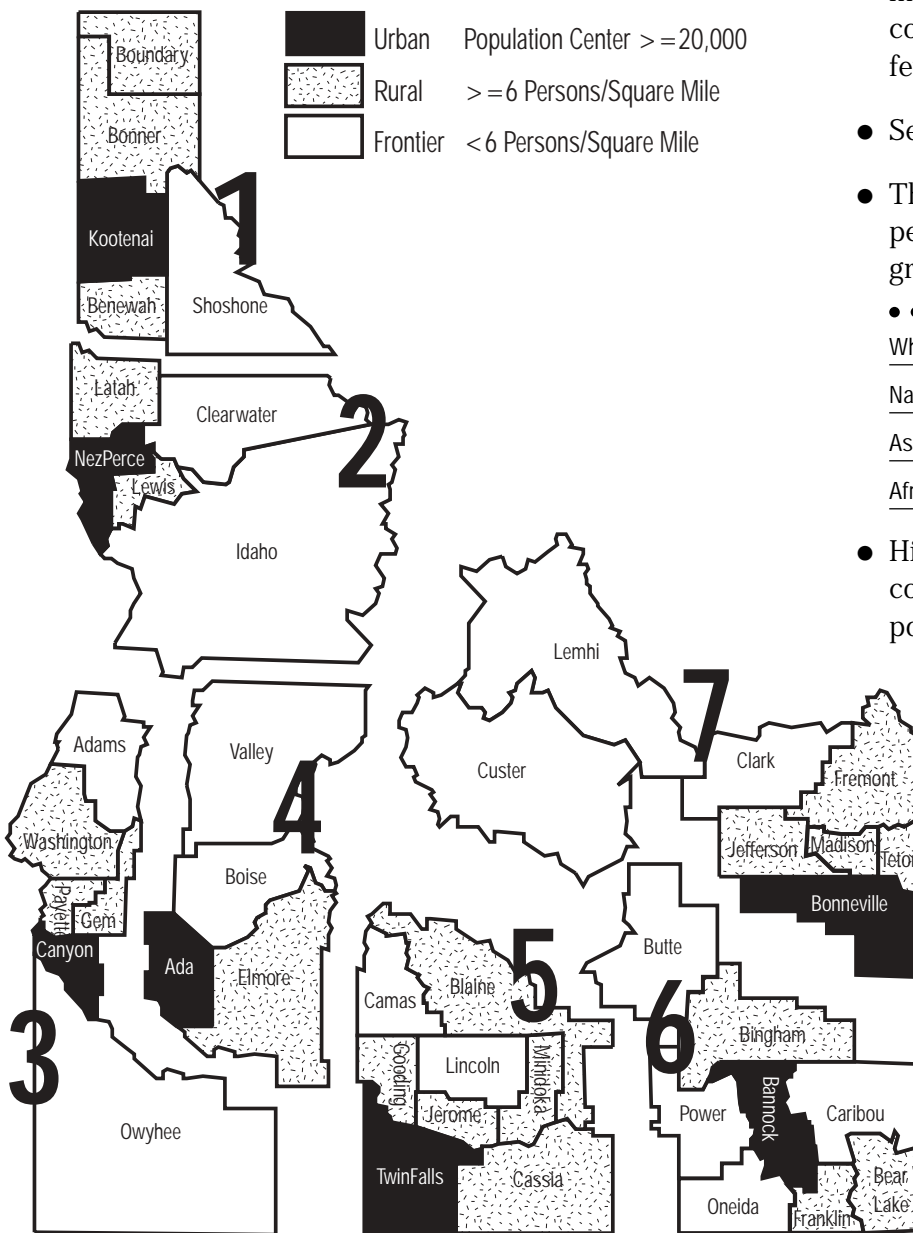
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White	96.9%
Native American/Alaskan Native	1.4%
Asian, Pacific Islander	1.3%
African American	0.6%

- Hispanics, who can be of any race, comprise 7.4 percent of the state's population.²

1999 Idaho Population Density by County

Public Health District Boundaries





Highlights

Prevalence

It is estimated that 65,000 residents of Idaho have diabetes, but only 43,000 have actually been diagnosed. The disease is especially prevalent among those 65 years of age or older. The average age of people when diagnosed with diabetes in Idaho is 49.

Mortality

Diabetes was the seventh leading cause of death among Idaho residents in 1999. Average annual death rates due to diabetes are substantially higher among those residents in older age groups, among Hispanics, and among those races other than white.

Economic Costs

The total annual cost of diabetes in Idaho, including direct medical expenses and indirect costs such as disability, work loss, and premature mortality, is estimated at \$338 million.

Health Care

Many adults in Idaho diagnosed with diabetes are currently not receiving the levels of health care that meet the standards recommended by the American Diabetes Association (ADA). Areas for achieving improved care include:

- ➊ Increasing the number of visits to health care professionals
- ➋ Optimizing the frequency that blood glucose levels are self monitored

- ➌ Conducting an HbA1c test every three months
- ➍ Receiving an annual influenza vaccination and an updated pneumonia vaccination
- ➎ Performing foot and eye examinations on a yearly basis

Risk Factors and Prevention

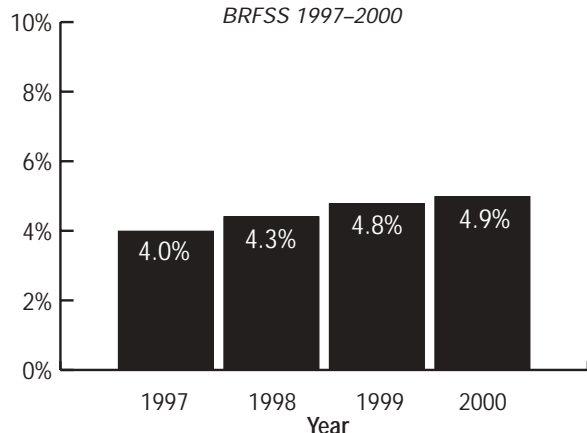
- The profile of a person most at risk for diabetes is:
 - Having blood pressure at or above 130/85
 - Having a family history of diabetes
 - Having diabetes during pregnancy or having a baby weighing more than nine pounds at birth
 - Being overweight
 - Getting little or no exercise
 - Being over the age of 45
 - Being African American, Hispanic/Latino, Native American, Asian American or Pacific Islander
- Diabetes prevention efforts for Idaho residents should primarily be focused on the known, manageable risk factors.
 - Reduce overweight and obesity
 - Increase physical activity and exercise
 - Improve diet, especially by eating more fruits and vegetables
 - Monitor and reduce high blood pressure
 - Lower cholesterol levels



Prevalence

Idaho Adults Ever Told They Have Diabetes

BRFSS 1997-2000



- Approximately 43,000 people or 4.9% of Idaho adults, 18 years of age or older, report ever being told by a doctor they have diabetes (excluding gestational diabetes).³ It is estimated that a total of 65,000 adult residents have the disease, but 22,000 have not yet been diagnosed.⁴

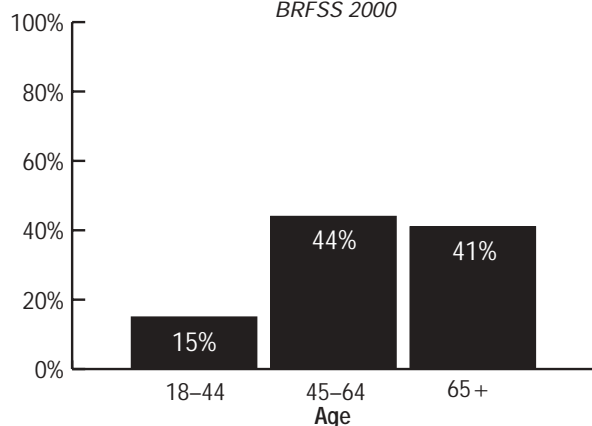
- The prevalence of diabetes among Idaho adults is 4.6% for men, 5.1% for women. The percentage of people diagnosed with diabetes increases with age, particularly among those older than 64 years of age.³

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Age: 18-34	1.2%
35-44	1.7%
45-54	5.1%
55-64	9.5%
65+	11.6%

Idaho Adults with Diabetes

BRFSS 2000



- Among Idaho adults told by a doctor they have diabetes, 41% are 65 years of age or older. The average age when the disease is first diagnosed is 49.³

- The prevalence rate for adults diagnosed with diabetes in the states immediately adjacent to Idaho in 1999-2000 are:⁵

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Montana (1999)	5.9%
Nevada (1999)	5.8%
Oregon (2000)	6.0%
Utah (2000)	5.4%
Washington (2000)	5.5%
Wyoming (2000)	5.0%

Mortality



- Diabetes was the seventh leading cause of death among Idaho residents in 1999.⁶

- Based on the three-year period from 1997 to 1999, the average annual age-specific death rate due to diabetes was considerably higher among older residents.⁶

Top 10 Causes of Death

Idaho Residents: 1999

	Number of Deaths	Death Rates per 100,000 Population
Total Deaths	9,508	759.6
1 Diseases of the heart	2,522	201.5
2 Malignant neoplasms	2,162	172.7
3 Cerebrovascular diseases	767	61.3
4 Accidents and adverse effects	591	47.2
5 Chronic lower respiratory diseases	565	45.1
6 Pneumonia and influenza	279	22.3
7 Diabetes mellitus	267	21.3
8 Alzheimer's disease	241	19.3
9 Suicide	180	14.4
10 Nephritis, nephrotic syndrome and nephrosis	91	7.3
All Other Causes	1,943	—

Diabetes Age-Specific Death Rate

Idaho Residents: 1997-1999

	Number of Deaths	Avg. Annual Age-Specific Death Rates per 100,000 Population
Total State	764	20.7
Age: <15	1	0.1
15-24	4	0.7
25-34	13	2.9
35-44	25	4.5
45-54	40	8.6
55-64	94	29.7
65-74	149	68.0
75-84	276	184.9
>=85	162	315.8

Diabetes Death Rates Based on Sex, Race, and Ethnicity

Idaho Residents: 1997-1999

	Number of Deaths	Age-Adjusted Avg. Annual Death Rates per 100,000 Population
Total State	764	
Sex: Male	318	21.7
Female	446	23.2
Race: White	740	22.3
Other Than White	24	47.1
Ethnicity: Non-Hispanic	733	22.3
Hispanic	31	38.9

- To compare populations that have different age distributions, it is best to use age-adjusted rates. Both male and female residents of Idaho had similar age-adjusted average annual death rates based on the past three years (1997-1999). On the other hand, the death rates were about twice as high for Hispanics when compared to non-Hispanics and for races other than white when compared to whites.^{6,7}

Health Care



Diabetes is a chronic illness that requires continuing medical care and education to prevent acute complications and to reduce the risk of long-term complications.

- The majority of Idaho adults with diabetes report having some kind of health plan (88%), which is higher than the 82% coverage level among adult residents who do not have diabetes. Among Idaho adults with diabetes, 47% reported visiting a health care professional for their diabetes 4 or more times in the past year. Thirty-six percent reported 1–3 visits and 1 out of 6 (17%) reported not having seen a health professional at all in the past year.³

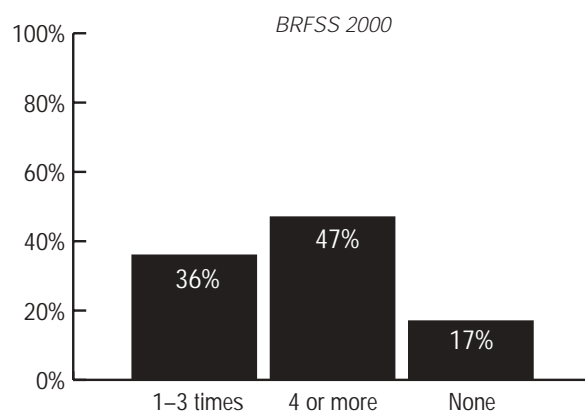
Hyperglycemia is present in all forms of diabetes. According to the Diabetes Control and Complications Trial (DCCT), maintaining blood glucose levels at normal or near normal levels significantly reduces the risk of developing complications of the eyes, kidneys and nerves. Achieving normal glucose levels for most patients requires education, self-management, and intensive treatment programs. Daily self-management of blood glucose levels, especially in insulin treated patients, is important to monitor for and prevent hyperglycemia.

ADA Recommendation: Most patients with type 1 and those taking insulin should do self-monitoring of blood glucose (SMBG) three or four times daily. The frequency of SMBG for those with type 2 should be sufficient to facilitate reaching more normal glucose levels.¹⁰

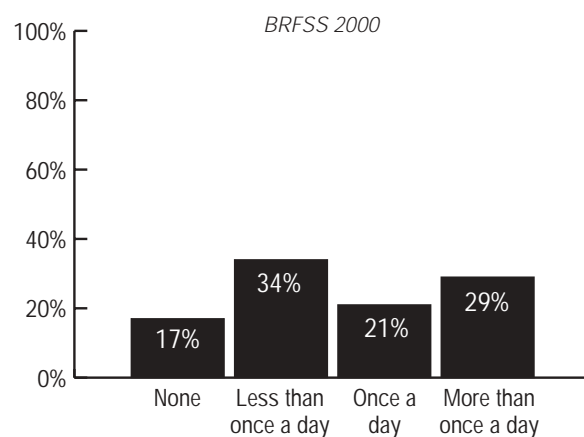
- Half of those diagnosed with diabetes (50%) reported checking their blood for glucose or sugar at least one or more times per day.³

Glycosylated hemoglobin (GHb) or HbA1c is a term used to describe a series of components formed over time from hemoglobin and glucose. The rate of formation is directly proportional to the blood glucose concentration. The level of GHb in a blood sample provides a history of the previous 120 days, the average life span of the formed components. An

Idaho Adults with Diabetes Who Have Seen a Health Professional for Diabetes in Past Year

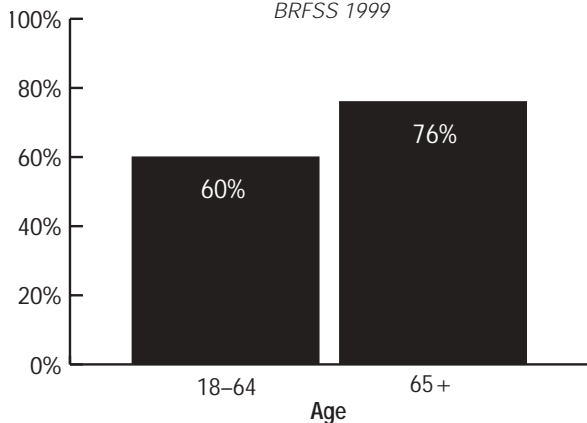


Idaho Adults with Diabetes Who Have Self-Monitored Their Blood Glucose in Past Year



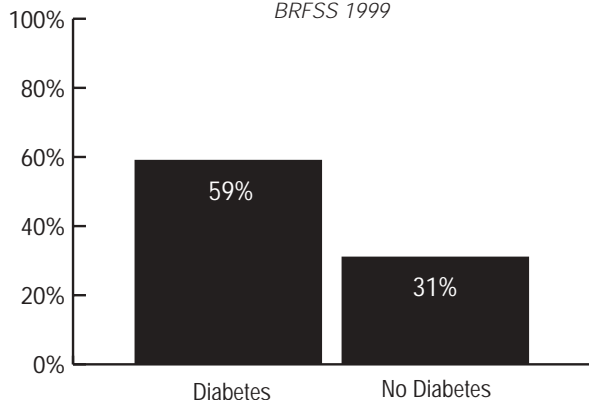
Idaho Adults with Diabetes Who Have NOT Heard of the HbA1c Test

BRFSS 1999



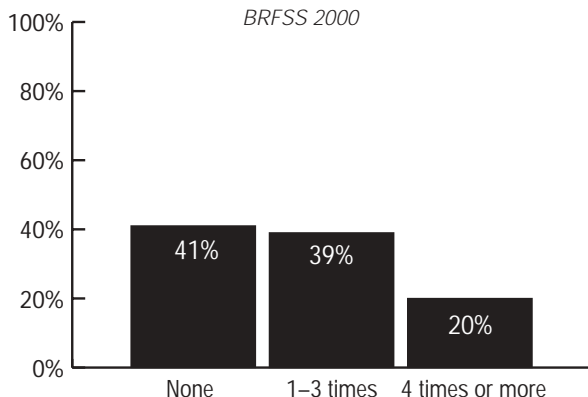
Idaho Adults with Diabetes Who Have Had a Flu Shot in Past Year

BRFSS 1999



Idaho Adults with Diabetes Who Have Had a Foot Check in Past Year

BRFSS 2000



HbA1c test accurately reflects the level of glucose control over the past 2-3 months.

ADA Recommendation: HbA1c testing should be performed routinely in all patients with diabetes, approximately every 3 months, so departures from the target range can be addressed in a timely fashion.¹⁰

- On average, 68% of Idaho adults with diabetes have not heard of the glycosylated hemoglobin or hemoglobin A1c test. People 65 years and older are less likely to know about this test (76%) than people who are younger (60%).³

Immunizations against **influenza** and **pneumococcal disease** are important preventive services for diabetes. People with diabetes are six times more likely to be hospitalized with flu complications and are at increased risk for dying from pneumonia. A flu shot should be given annually. A one-time pneumonia revaccination is recommended for people older than 64 years of age previously immunized when they were less than 65 years of age and if the vaccine was administered more than five years ago.

ADA Recommendation: Anyone diagnosed with diabetes should get an annual flu shot as a preventive measure.¹⁰

- Fifty-nine percent of adults with diabetes reported receiving flu shots in the past year.³

Foot ulcers and **amputations** are a major cause of morbidity and disability for people with diabetes. Evaluation and management of risk factors for foot ulcers and amputations can prevent or delay the onset of these adverse outcomes. Risk identification is fundamental for effective preventive management of foot problems in people with diabetes.

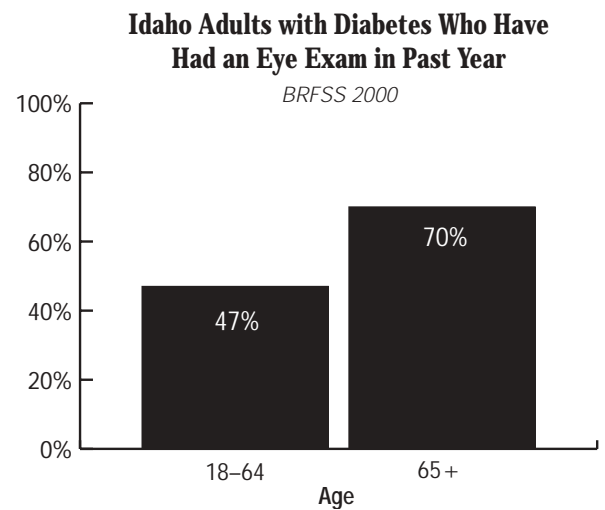
ADA Recommendation: All individuals with diabetes should receive a thorough foot examination at least once a year to identify high-risk foot conditions.¹⁰

- When asked how many times a health professional had checked their feet in the past year, 41% of those adults in Idaho diagnosed with diabetes reported they had not had their feet checked.³

Retinopathy is a highly specific vascular complication of both type 1 and type 2 diabetes. The prevalence of retinopathy is strongly related to the duration of diabetes. After 20 years nearly all patients with type 1 diabetes and greater than 60% of patients with type 2 diabetes have some degree of retinopathy. Diabetic retinopathy poses a serious threat to vision.

ADA Recommendation: Comprehensive dilated eye and visual examinations should be performed annually by an ophthalmologist or optometrist on all patients age 10 years and older who have had diabetes for 3–5 years, all patients diagnosed after age 30, and any patient with visual symptoms and/or abnormalities.¹⁰

- Eighteen percent of Idaho adults with diabetes reported being told that their diabetes had affected their eyes or that they had retinopathy.³
- Fifty-six percent of Idaho adults with diabetes reported having an eye exam in the past year in which the pupils were dilated. People with diabetes who are older than 65 years are more likely to have this exam (70%) than people less than 65 (47%).

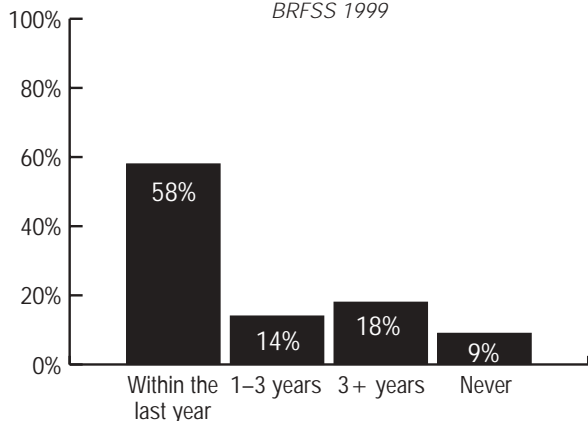




Diabetes Education

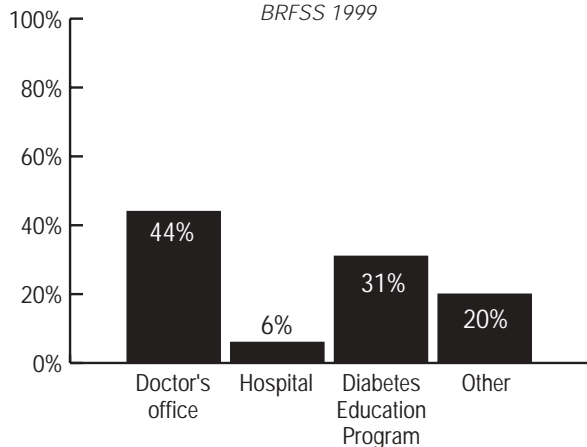
**Time Since Last Diabetes Education
Among Idaho Adults with Diabetes**

BRFSS 1999



**Where Idaho Adults with Diabetes
Received Diabetes Education**

BRFSS 1999



Diabetes education and **self-management training** are essential to diabetes care. The goals of diabetes education are to optimize metabolic control, prevent acute and chronic complications, and optimize the quality of life. One of the goals of Healthy People 2010¹ is to increase the proportion of individuals with diabetes who receive formal diabetes education from the 1998 baseline of 40%.

Currently there are 13 diabetes education programs in Idaho that are recognized by the American Diabetes Association. (See Appendix on back cover.)

- Of people with diabetes surveyed in Idaho, 58% reported receiving some kind of diabetes education within the survey year. Nine percent have never received education about their diabetes.³
- Of those receiving education, 44% reported receiving it in their doctor's office while 31% reported receiving education from a diabetes education program.³

Risk Factors



Overweight

Based on self-reported height and weight measurements, 85% of Idaho adults with diabetes are overweight (defined as a body mass index greater than or equal to 25). In contrast, 54% of those without diabetes are overweight.³

Sedentary Lifestyle

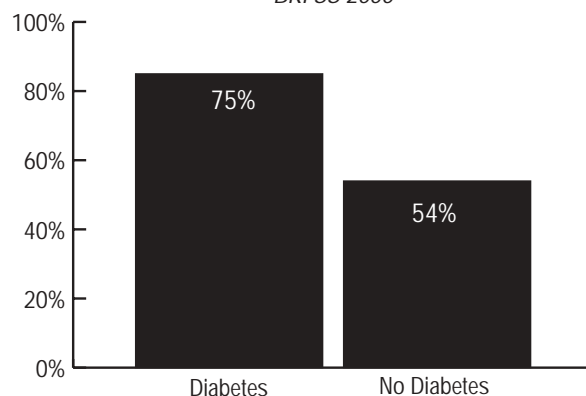
Approximately one in four Idaho adults with diabetes (27%) report they have a sedentary lifestyle, i.e. they did not participate in any physical activities or exercise in the past month. Sedentary lifestyles were reported by 19% of those without diabetes.³

Poor Diet

A majority of Idaho adults with diabetes (73%) do not consume the recommended five servings of fruits and vegetables per day. An even higher proportion of adults without diabetes (78%) report not eating the recommended number of servings.³

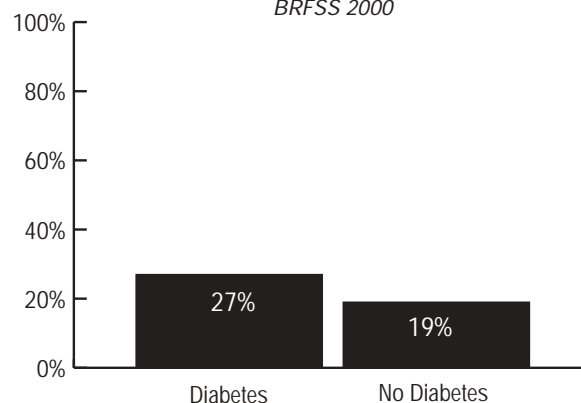
Idaho Adults Who Are Overweight

BRFSS 2000



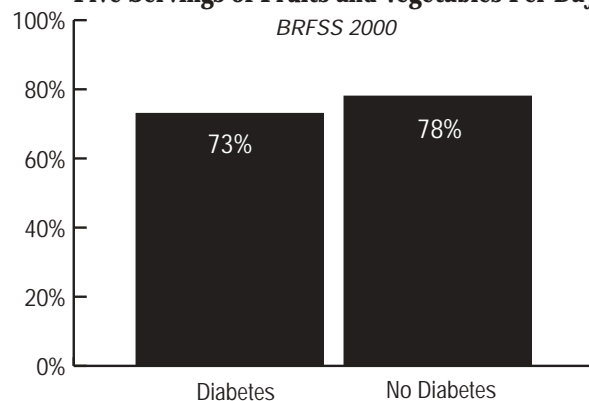
Idaho Adults with Sedentary Lifestyles

BRFSS 2000



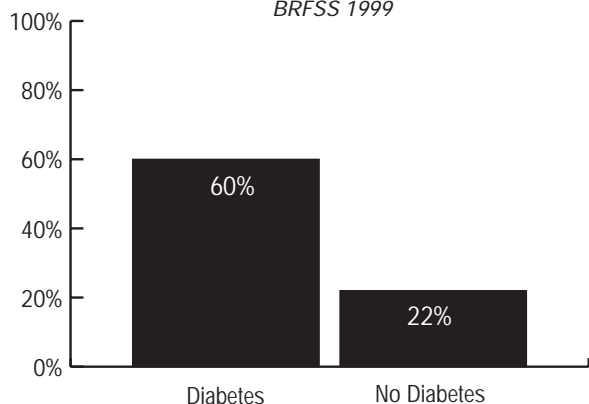
Idaho Adults Consuming Fewer Than Five Servings of Fruits and Vegetables Per Day

BRFSS 2000



Idaho Adults with High Blood Pressure

BRFSS 1999



Blood Pressure

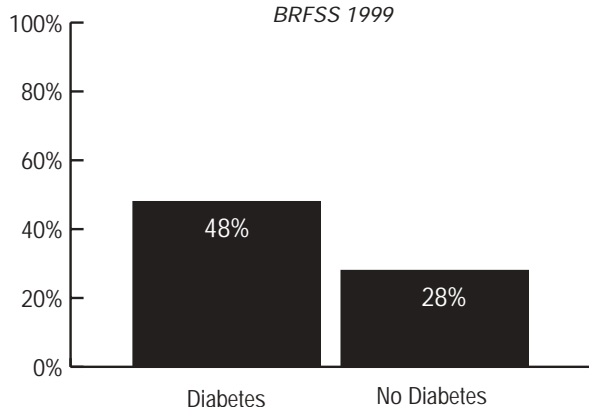
Among Idaho adults who have had their blood pressure checked, 60% of those diagnosed with diabetes were ever told they had high blood pressure. In contrast, only 22% of those not diagnosed with diabetes have ever been told they have high blood pressure.³

Cholesterol Levels

Almost half, 48% of Idaho adults with diabetes who have had their blood cholesterol checked, have ever been told by a health professional that their cholesterol level is high. The reported level among those without diabetes is 28%.³

Idaho Adults with High Cholesterol

BRFSS 1999

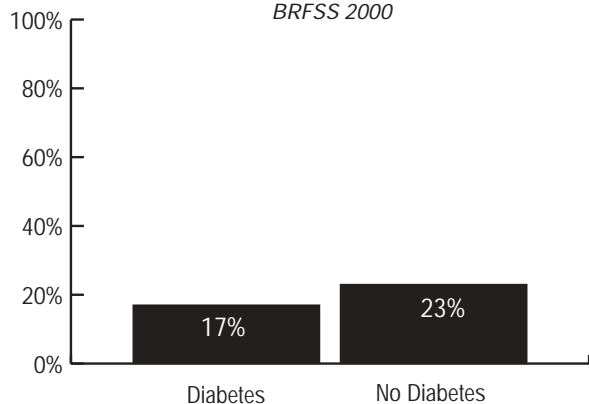


Smoking

Seventeen percent of Idaho adults with diabetes are current smokers.³

Idaho Adults Who Are Current Smokers

BRFSS 2000





Sources and Notes

- 1 United States Department of Health and Human Services PHS: Healthy People 2010 (Conference Edition). United States Department of Health and Human Services, Washington DC, 2000.
- 2 U.S. Bureau of the Census, 1998.
- 3 Idaho Behavioral Risk Factor Surveillance System (BRFSS), 1997-2000 Survey Data, Bureau of Vital Records and Health Statistics, Idaho Department of Health and Welfare, 2001.
- 4 Estimates were developed by the Bureau of Vital Records and Health Statistics, Idaho Department of Health and Welfare, using data from the Idaho Behavioral Risk Factor Surveillance System, 2000; the U.S. Bureau of the Census, 2000; and the National Diabetes Fact Sheet, Centers for Disease Control and Prevention, 1998.
- 5 Wyoming Diabetes Control Program, 2001; Oregon Diabetes Control Program, 2001; Utah Center for Health Data, 2001; Washington State Center for Health Statistics, 2001; Behavioral Surveillance Branch, Centers for Disease Control and Prevention, 1999.
- 6 Bureau of Vital Records and Health Statistics, Idaho Department of Health and Welfare, 2001.
- 7 Idaho age-adjusted rates were calculated using the 2000 U.S. census as the standard population. Age-adjusted rates based on 2000 U.S. population estimates are not comparable to age-adjusted rates based on the 1940 U.S. census standard population, which was used prior to 1999. Codes for Diabetes mellitus: ICD-9 (1997-1998) 250; ICD-10 (1999) E10-E14.
- 8 American Diabetes Association, Economic Consequences of Diabetes Mellitus in the U.S. in 1997, Diabetes Care, Volume 21, Number 2, 1998.
- 9 Estimates were developed by the Center for Vital Statistics and Health Policy, Department of Health and Welfare, using data from the American Diabetes Association, 1998; the U.S. Bureau of the Census, 1997; and the Idaho Behavioral Risk Factor Surveillance System, 1998.
- 10 American Diabetes Association, Clinical Practice Recommendations, Volume 22, Supplement 1, 1999.



Appendix

The following diabetes education programs in Idaho are Recognized by the American Diabetes Association. These Recognized programs meet the National Standards for excellence in diabetes education.

Bingham Memorial Hospital/ECF
Diabetes Education Program
98 Poplar Street
Blackfoot, ID 83221
208-785-3820

Humphreys Diabetes Education Center, Inc.
The Diabetes Education Program
1226 River Street
Boise, ID 83702
208-331-1155

Bannock Regional Medical Center
Diabetes Education Program
651 Memorial Drive
Chubbuck, ID 83202
208-239-1818

Kootenai Medical Center
Diabetes Education Program
2003 Lincoln Way
Coeur d'Alene, ID 83814
208-666-2036

Gooding County Memorial Hospital
Self-Monitoring Diabetes Education Program
438 Idaho Street
Gooding, ID 83330
208-934-4129

Rocky Mountain Diabetes Diagnostic and
Treatment Center
The Outpatient Diabetes Education Program
2220 East 25th Street
Idaho Falls, ID 83404
208-523-1122

Eastern Idaho Regional Medical Center
Diabetes Education Program
3100 Channing Way
Idaho Falls, ID 83403
208-529-6702

Gritman Medical Center
Diabetes Care—Education and Therapeutics
S. 700 Main Street
Moscow, ID 83843
208-883-6341

St. Joseph Regional Medical Center
Outpatient Diabetes Education Program
415 Sixth Street
Lewiston, ID 83501
208-799-5227

Mercy Medical Center
LifeSkills Diabetes Education Outpatient Program
1512 12th Avenue Road
Nampa, ID 83686
208-463-3223

Pocatello Regional Medical Center
Outpatient Diabetes Education Program
777 Hospital Way
Pocatello, ID 83201
208-239-2483

Twin Falls Clinic and Hospital
Diabetes Center
660 Shoshone Street East
Twin Falls, ID 83301
208-733-3700

Magic Valley Regional Medical Center
The Diabetes Education Program
650 Addison Avenue West
Twin Falls, ID 83301
208-737-2903